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ABSTRACT

The pilot Job Effectiveness Training (JET) workplace basic skills program, developed by Canada's Alberta Vocational College (AVC), Edmonton, for Stelco Steel during 1989-90, was evaluated in terms of impacts or changes from the perspective of the four major stakeholder groups: the students (12 Stelco employees); the employers (Stelco management); the institution (administration of AVC); and the government funding agencies. Impacts were determined through structured interviews, with an additional questionnaire for students that replicated portions of the post-program evaluation. The study found at least 54 positive impacts and only 3 negative impacts; of the impacts, 30 were planned and 24 were unplanned. Student impacts achieved included a 20 percent increase in skill levels, retention of increased skills, use of skills learned, greater self-confidence, and a positive attitude toward education. For the employer, JET provided access to a system for upgrading its work force, upgrading some employees, improved communication, and awareness of the importance of basic skills to job performance. AVC outcomes included development of a generic workplace basic skills curriculum, enhanced reputation, experience with nontraditional delivery, and development of a model for interaction with business and industry. Funders' outcomes were development of an innovative literacy project and positive publicity. The study concluded that the project was highly successful for stakeholders and that it was cost effective. (KC)

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REPORT SUMMARY

Evaluation of a Workplace Basic Skills Program:

An Impact Study of AVC Edmonton's 1990 Job Effectiveness Training Program at Stelco Steel

by

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Executive Summary

The purpose of this study was to evaluate a pilot workplace basic skills program, specifically the JET (Job Effectiveness Training) curriculum developed by Alberta Vocational College Edmonton for Stelco Steel during 1989-90. The evaluation was conducted in terms of impacts or changes from the perspective of the four major stakeholder groups: the students (12 Stelco employees); the employers (Stelco management); the educational institution (administration of AVC Edmonton); and the funding agencies (representatives of the government departments who participate in the National Literacy Partnership Strategy). Impacts were determined through structured interviews, with an additional questionnaire for the students which replicated portions of the post-program evaluation. The study concluded that there were at least 54 positive impacts and only 3 potential negative impacts; of the impacts, 30 were planned and 24 were unanticipated. It has been concluded that this program was highly effective from the point of view of all stakeholders. In addition, it may be concluded that the program was highly cost-effective, although the process for determining this conclusion is tentative at best. This study provides a large number of specific recommendations for workplace basic skills programming from all the stakeholders. It is recommended that more impact studies be conducted of workplace basic skills programs in order to provide a basis for comparison.

The Stelco JET program under study

With a grant from the National Literacy Partnership Strategy, AVC Edmonton developed a workplace basic skills curriculum and piloted it at Stelco Steel, Edmonton Works from November 1989 to April 1990. The Job Effectiveness Training (JET) program is a generic curriculum intended to address basic skills in the workplace by serving as a basis on which to customize an educational upgrading program for a specific business or industry. AVC Edmonton planned and hosted the pilot program for Stelco, providing the curriculum development, administrative, instructional and evaluative services. Stelco Steel participated by recruiting and rewarding the students, availing the instructor of relevant teaching materials and topics, providing guest speakers and strong moral support for the program.

The objectives of the JET program were to train Stelco employees to cope with work-related reading, writing and numeracy requirements; to improve spelling of work-related terminology; to improve knowledge of safety regulations, personnel and union information, and the company; to develop learning strategies to enhance the future learning potential of each trainee; to generate improved knowledge and skill related to computer literacy, the metric system, interpersonal relations, and more advanced reading skills. Instructional materials and procedures

in the JET program were based on those found specifically in the Stelco Steel environment.

Twelve employees of Stelco Steel became voluntary students attending classes at AVC Edmonton on their days off. Stelco paid the students, at the time of graduation, for half of the actual hours each participant took part at his/her regular hourly wage. The students came from a variety of jobs within the steel plant and demonstrated a variation in basic skill levels and interests.

At the conclusion of the 100 hour program, quantitative and qualitative results included the following:

1. over 20 % gains in objective test scores in reading, writing and numeracy.
2. high levels of student satisfaction with the course, especially with the topics such as computer literacy, the metric system, the steel making process, the steel industry, and Stelco's customers.
3. gains in understanding of computers, Stelco's operations, and the steel making process, as cited by Stelco's supervisors who observed the changes in participating employees.
4. overall improved understanding of written instructions and self-confidence of participants.

The program was evaluated at the conclusion for immediate, short-term impacts or achievements for the students. After one year, there was an interest in examining the longer term impacts for all the stakeholder groups.

Overview of the impact study

A fundamental assumption of this study was that an innovative educational program is implemented in order to meet some needs of program stakeholders. A significant need may be to promote change, for example improved skills and attitudes of participants, increased numbers of participants and partnerships for educational institutions, implementation of program mandate for agencies, an upgraded workforce for a business. Thus it was assumed that this Stelco JET program should have had an impact both immediately and over time.

The purpose of this impact study was to determine changes or impacts experienced by each of the four major stakeholder groups: the program participants, ie. 12 Stelco employees; the employer, ie. Stelco Steel represented by Stelco management; the educational institution, ie. Alberta Vocational College Edmonton represented by the JET manager and senior administration; and the program funders, specifically representatives from Alberta Career Development and Employment, Alberta Advanced Education, the Department of Secretary of State in Edmonton, and the National Literacy Secretariat in Ottawa.

The goals of the study were to assess the impact of this pilot program from the perspective of the stakeholders, to draw implications and recommendations for these and other workplace

basic skills stakeholders, and to pilot the process of impact evaluation for workplace basic skills programs. The goals were all achieved.

The process of the study was to interview representatives from the stakeholder groups for opinion regarding the JET program. In addition, the students completed a questionnaire which replicated relevant portions of the post-program evaluation. The data was analyzed, through content analysis, for indications of anticipated and achieved change, and of unanticipated but achieved change or impact. Limitations and delimitations to this process are acknowledged. Cost-effectiveness analysis was attempted and the inability to draw conclusions about cost-effectivess were illuminated. Much of what stakeholders said in response to questions formed direct or indirect recommendations for the other stakeholders.

Objectives, responses and observations

To address the goals of the study, nine objectives were the focus of responses elicited from stakeholders, and an analysis of the responses lead to some generalized observations.

The first major objective of the study was to determine the extent to which participation in the JET program had an impact,

both for each individual and in a collective sense, in the work environment, on ability to perform work-related reading, writing, math and computer tasks; work-related interpersonal communications; work-related decision-making; and actual job tasks in total. It was observed that, in their own opinion, the majority of students had acquired improved basic skills and were benefitting from the JET program in performing their jobs.

The second major objective was to determine the extent to which particiption in the JET program had an impact, both for each individual and in a collective sense, in the work environment, on awareness of and attitude towards corporate culture (Stelco goals/procedures), union activities and responsibilities, opportunities for learning and participation, and the global context of the steel industry. It was observed by all the stakeholders that the JET program had an immediate and long-term positive impact on the participants' awareness of and attitude towards the corporate culture and the global context of their industry. Clearly, the long-term impact of this JET program was an increase in self-esteem and confidence in the participants, and an increase in willingess to learn, especially about work-related topics.

A third objective was to determine the extent to which participation in the JET program had an impact, for individual students and for the group, in the non-work environment (personal

and social environment), on self-perceived ability to perform and attitude towards essential literacy activities, leisure literacy activities, formal and informal learning opportunities, essential math activities (banking, etc.), computer activities, self-esteem, communication skills, and balance between work and non-work life. Only three respondents said that they planned for change as a result of participating in JET, yet the majority of participants felt that the JET program had changed their lives, in a positive manner, to some extent.

A fourth objective was to determine, from the point of view of the employer, the extent to which offering the JET program to employees had an impact on productivity, specifically increased output; decreased accidents and/or mistakes; decreased problems with absenteeism, interpersonal issues, employee turnover; and increased commitment to the company. Stelco management was adamant that these measures did not and could not apply to the JET program. Apart from the last item, commitment to the company (which can not be emperically measured), the other items had not figured into the initial decision to offer the JET program to staff. The motive had been clearly one of enhancing the basic skills of a static workforce with a view to increased individual self-esteem, learnability, and flexibility in order to affect long-term productivity. Stelco management was committed to the notion that the program must belong to the students and thus did not set standards of achievement or impose expectations.

A fifth objective was to determine, from involvement with the JET program, the impact on management interest in basic skills training for employees. Stelco management became confirmed advocates for JET. Every respondent could list positive benefits for Stelco and for the students; every respondent thought JET should be repeated in order to involve more employees. Clearly, the JET program contributed to enhanced interpersonal relations at Stelco Steel, leading to team building and improved worker-management understanding.

A sixth objective of the study was to determine, from the view of the educational institution, the extent to which developing, promoting and hosting the JET program at Stelco had an impact on institutional goals and activities with regard to priorities, resource allocation, partnerships, workplace basic skills programming, institutional research, unmet community needs, staff requirements and training, and public relations. AVC Edmonton, having experienced success with JET as a pilot community-based program, has initiated more off-site and customized programs. Marketing and promotion of programs has increased in number and importance. To address changing institutional priorities, additional human and financial resources are being allocated to community-based programs. The JET project was a significant "first" partnership is many ways and AVC Edmonton anticipates developing many more partnerships with business and industry, and with the federal and

provincial governments. AVC intends to undertake many more workplace literacy programs in response to needs expressed in the community. The AVC JET program continues to address unmet needs in the immediate and wider community by providing a workplace basic skills model, a generic curriculum and a unique instructor training program. At AVC Edmonton, staff attitudes, requirements and training have changed substantially. Developing and promoting JET has generated positive public relations for AVC Edmonton and has established the institution as a provider of workplace literacy programming.

The seventh objective of this impact study was, for the funding agencies individually and collectively, to determine the extent to which funding the JET pilot program at Stelco had an impact on interest in workplace basic skills programs, specifically increased numbers and variety of pilots, dissemination of successful pilot information, commitment to ongoing program funding, and partnerships. The eighth objective of the study was to determine NLPS partners' perceptions of success specific to agency mandate, resources expended, and public awareness. In short, Stelco JET was intended to demonstrate the viability of workplace basic skills training. Each representative of the NLPS partners stated unequivocably that the Stelco JET program had met with their expectations and had achieved their objectives. As a project undertaken early in the National Literacy Partnership Program, the Stelco JET program

had a role to play in helping the NLPS partners clarify the program, its goals and limitations.

The last objective was to determine the strengths and weaknesses of this form of evaluation study with regard to process and outcome. The strengths are the number and variety of positive impacts that are surfaced through the process of structured interview and through involvment of all stakeholders. The weaknesses are related to availability and potential irrelevance of pre and post-test results and opinions from which to extrapolate impacts. Ultimately, the process of cost-effectiveness analysis is meaningless without comparison either to other programs or to standards of excellence.

Impacts of the Stelco JET program

The following generalizations or conclusions may be drawn from the observations of stakeholder responses. In total, there were 54 positive impacts and only 3 potential negative impacts. Impacts are divided into anticipated and unanticipated for each of the four stakeholder groups.

For the students, the anticipated and achieved impacts were retention of increased basic skill levels, utilization of skills learned, greater self-confidence, enhanced inter-personal and

inter-company communications, a positive attitude towards continuing education, lessened apprehension about learning new skills, increased job performance, increased motivation, and increased interest in the industry. The unanticipated but achieved impacts were changes in attitudes toward education in general, increasing levels of self-esteem, ability to cope with change (resulting from a strike and resultant downsizing), confidence in self-directed learning, and confidence in the management of Stelco Steel.

For the employer, the anticipated and achieved impacts included successful and ongoing access to a system for upgrading its workforce, success at upgrading some employees, development of an appropriate curriculum approach, confirmation that student-ownership of upgrading programs was appropriate, improved communication with graduates, and knowledge about the outcomes of upgrading activities. The unanticipated impacts were an increased awareness of the importance of basic skills to job performance, awareness of the skill deficits of employees, the ripple effect of graduates promoting upgrading to others, wider dissemination of the content of JET through secondary workshops, improved relationships between management and some union members, increased awareness of the services of AVC and of Alberta's post-secondary education system, increased understanding of the difficulty levels of communications and math relative to jobs at Stelco, increased efforts to incorporate plain language in

written and verbal information dissemination, initiation of a qualitative measurement for a quantitative resource allocation, sensitization to the needs and worries of some employees, enhanced public relations and a national reputation for innovation, a successful partnership with an educational institution and a government program.

For the educational institution, the anticipated impacts were the development of a generic workplace basic skills curriculum, the establishment of a reputation as a provider of workplace basic skills programs, the enhancement of AVC's reputation for innovation and flexibility, the cultivation of new partnerships and new sources of program funds, experience with responsive, community-based programming, experience with non-traditional delivery (ie. to shiftworkers), development of a model for project management and teaching in different environments, development of a model for creating and enhancing partnerships with business and industry. The unanticipated impacts were that JET served as a catalyst to implement a strategic plan set out by senior administration, resulted in a pool of instructors trained to undertake customized workplace programs, created a program of staff development for community-based programming, enticed Stelco workers to enroll in other AVC courses, provided AVC with a national profile in workplace literacy programming, and enhanced AVC's ability to demonstrate flexibility and responsiveness.

The anticipated impacts for the National Literacy Partnership Strategy partners included addressing the objectives of supporting innovative research-based literacy projects, encouraging workplace literacy projects, exploring the concept of partnerships between education, industry and government in addressing adult literacy issues, encouraging the development of partnerships, supporting literacy initiatives in Alberta's post-secondary institutions, generating positive public relations, creating a demonstration project for example purposes, and accessing of federal monies by the private sector. The unanticipated impacts were the opportunities to learn a great number of workplace literacy specifics such as timing and recruitment, and partnership specifics such as flexibility and collaboration.

Conclusion

In addition to generating specific information about the nine objectives of the study and providing generalizations about the impacts of the JET program, this study directly and indirectly provided recommendations relative to workplace basic skills programs from each stakeholder to the others. Of particular interest is the inconguity between the measures of success pre-determined by the employer and employees and those espoused by the educational institution and the government

departments. The major recommendation that surfaces is that upgrading Canada's workforce may be most appropriately conducted while individuals are employed.

In summation, it may be concluded that, with a relatively small budget, the Stelco JET program achieved a very large number of positive impacts, many planned and many unanticipated. Similarly, because of the large quantity, the quality and usability of the data generated, it has been concluded that the study of impact as a form of program evaluation may be a valuable and appropriate method of examining the benefits or outcomes of an educational program.

A copy of the full report is available, at a slight cost to cover printing, from:

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